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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Nobuyuki Matsukawa

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06/03/2004

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EXAMINER

VU, NGOC YEN T

ART UNIT

PAPER NUMBER

2612

6

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/644,859

Applicant(s)

MATSUKAWA, NOBUYUKI

Examiner

Ngoc-Yen T. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. The amendments, filed 03/16/2004, have been entered and made of record. In view of the Applicant's amendment to the title and figures 1A-1B, objections to the title and the drawings are hereby withdrawn.

Response to Arguments

2. Applicant's arguments filed 03/16/2004 have been fully considered but they are not persuasive.

With respect to the Inagaki '634 reference, the Applicant argues that Inagaki does not disclose or teach such high-speed photographing in which a specific number of video data that form images of an object are output per field of the analog video signal. The Examiner respectfully disagrees. Inagaki does teach a high speed photographing technique in which a specific number of analog video data that form images of an object are output per field (see Fig. 5, col. 11 line 56 – col. 12 line 21; col. 17 lines 3-24). The Applicant further argues that Inagaki does not disclose or teach how to obtain reference signals and adjust a reference level of each video data based on the reference signals as required in the amended claims. The Examiner respectfully disagrees. Inagaki specifically teaches how the optical black level correction process changing means is determined and adjusted for the specific number of video data in the high-speed photographing mode (thinned-out of view finder mode) (see col. 18 line 5-31; col. 20 line 61 – col. 21 line 55; col. 22 line 24 – col. 23 line 6; col. 24 line 34 – col. 25 line 15; col. 25 line 63 – col. 26 line 54; col. 42 lines 43-57).

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inagaki et al. (US #6,084,634).

Regarding claim 1, Inagaki '634 teaches an image pickup apparatus comprising:

an image pickup device (Fig. 13, image sensor 4) having a light-receiving section to receive light from an object to generate an analog video signal, and a light-blocking section to block the light to generate reference signals (Fig. 15, effective pixel region and OB area) (col. 18 lines 1-37), a specific number of video data that form images of the object being output per field of the analog video signal field (see Fig. 5, col. 11 line 56 – col. 12 line 21; col. 17 lines 3-24).

an analog-to-digital converter to convert the specific number of video data into a digital video signal (Fig. 13, A/D 5);

a processor to accumulate the reference signals a predetermined number of times from a predetermined accumulation starting point for one of the specific number of video data on scanning lines for a specific period and average the accumulated signal to generate an average signal (see col. 18 line 5-31; col. 20 line 61 – col. 21 line 55; col. 22 line 24 – col. 23 line 6; col. 24 line 34 – col. 25 line 15; col. 25 line 63 – col. 26 line 54; col. 42 lines 43-57); and

an adjuster to adjust a reference level for each of the specific number of video data of the video signal based on the average signal so that the difference between the video signal and the average signal becomes zero (see col. 18 line 5-31; col. 20 line 61 – col. 21 line 55; col. 22 line

24 – col. 23 line 6; col. 24 line 34 – col. 25 line 15; col. 25 line 63 – col. 26 line 54; col. 42 lines 43-57).

Claim 1 differs from Inagaki that the claim requires the adjuster adjusts a reference level of the digital video signal based on the average signal so that the difference between the digital video signal and the average signal becomes zero. In another embodiments as shown in figures 29-32, Inagaki '634 teaches a fixed pattern noise (FPN) memory (703) for storing average of dark image data from the sensor element, a memory controller (704) and a subtractor (706) wherein the digital video signal outputted from the image sensor (4) is adjusted based on the average dark image data so that the difference between the digital video signal and the average signal becomes zero (col. 27 line 44 – col. 29 line 49). In light of the teaching from Inagaki, it would have been obvious to one of ordinary skill in the art to utilize the FPN correction taught in the embodiment shown in figures 29-32 in order to obtain continuous image display on a monitor without reducing the output image rate.

As to claim 2, Inagaki also teaches a controller (Figs. 35, 40, 44, 46, 49 and 51, controller 11) to decide the number of times for accumulation as $2n$ that is smaller than a specific number "m" of the scanning lines for forming the image of the object, "n" and "m" being positive integers, and to decide the accumulation starting point as $(m - 2^n)/2$ (Inagaki teaches that the number of accumulated image frames per second is increased as the time for reading out pixels in the partial areas is decreased; see Figs. 47, 48 and 52; see also col. 11 line 62 – col. 12 line 21; col. 38 line 11 – col. 39 line 14; col. 40 line 38 – col. 41 line 14).

Regarding claims 3-4, they are method claims corresponding to the apparatus claims 1-2. Therefore, method claims 3-4 are analyzed and rejected as previously discussed with respect to claims 1-2

Regarding claim 6, Inagaki '634 teaches an image pickup apparatus comprising:

an image pickup device (Fig. 13, image sensor 4) having a light-receiving section to receive light from an object to generate an analog video signal, and a light-blocking section to block the light to generate reference signals (Fig. 15, effective pixel region and OB area) (col. 18 lines 1-37), a specific number of video data that form images of the object being output per field of the analog video signal field (see Fig. 5, col. 11 line 56 – col. 12 line 21; col. 17 lines 3-24).

an analog-to-digital converter to convert the specific number of video data into a digital video signal (Fig. 13, A/D 5);

a processor to accumulate the reference signals a predetermined number of times from a predetermined accumulation starting point for each video data on scanning lines for a specific period and average the accumulated signal to generate an average signal (see col. 18 line 5-31; col. 20 line 61 – col. 21 line 55; col. 22 line 24 – col. 23 line 6; col. 24 line 34 – col. 25 line 15; col. 25 line 63 – col. 26 line 54; col. 42 lines 43-57); and

an adjuster to adjust a reference level for each video data of the digital video signal based on the average signal so that the difference between the video signal and the average signal becomes zero (see col. 18 line 5-31; col. 20 line 61 – col. 21 line 55; col. 22 line 24 – col. 23 line 6; col. 24 line 34 – col. 25 line 15; col. 25 line 63 – col. 26 line 54; col. 42 lines 43-57).

Claim 1 differs from Inagaki that the claim requires the adjuster adjusts a reference level of the digital video signal based on the average signal so that the difference between the digital

video signal and the average signal becomes zero. In another embodiments as shown in figures 29-32, Inagaki '634 teaches a fixed pattern noise (FPN) memory (703) for storing average of dark image data from the sensor element, a memory controller (704) and a subtractor (706) wherein the digital video signal outputted from the image sensor (4) is adjusted based on the average dark image data so that the difference between the digital video signal and the average signal becomes zero (col. 27 line 44 – col. 29 line 49). In light of the teaching from Inagaki, it would have been obvious to one of ordinary skill in the art to utilize the FPN correction taught in the embodiment shown in figures 29-32 in order to obtain continuous image display on a monitor without reducing the output image rate.

Regarding claim 7, it is a method claim corresponding to the apparatus claim 6. Therefore, method claim 7 is analyzed and rejected as previously discussed with respect to claim 6.

Allowable Subject Matter

5. Claim 5 is allowed.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen T. Vu whose telephone number is 703-305-4946. The examiner can normally be reached on Mon. – Fri. from 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



NGOC-YEN VU
PRIMARY EXAMINER

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NYV
05/29/2004